

SOME NOTODONTIDAE FROM MALAYSIA AND BURNEI (LEPIDOPTERA)

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14-12, Miyamae 3 chome, Suginami-ku, TOKYO, 168

Some Notodontid including one new subgenus, seven new species and one new subspecies are described in this paper. These moths were collected by Mr. Hitoshi Hasegawa, Hokkaido Agricultural Experimental Station, Sapporo and Mr. Yutaka Arita and others of Meijo University, Nagoya in the Malay Peninsula and north Borneo. I am grateful to these gentlemen for allowing me to study the valuable specimens.

Tarsolepis Butler

1. *Tarsolepis remicauda* Butler

1♀, Bira, Burnei, 17 vii 1969 (H. Hasegawa leg.).

Tarsolepisoides subgen. nov.

Type species: *Tarsolepis japonica* Wileman et South

Female antenna weakly pectinated; 3rd joint of palpus short; vein R_2 of forewing diverging from areole; uncus of male genitalia never bifurcate. In nominate subgenus, female antenna filiform; 3rd joint of palpus long; vein R_2 of forewing diverging from common stem of veins R_3 - R_4 ; uncus of male genitalia bifurcate.

Matsumura (1929) has noticed these some characteristics and has erected the genus *Pika* for *taiwana* Wileman. Unfortunately, *Pika* is a junior synonym of nominate subgenus, as he compared it with *japonica* instead of *remicauda*; therefore, a new subgenus should be established for *japonica* based on the same characteristics except for substituting vein R_2 of forewing for the unstable vein M_1 .

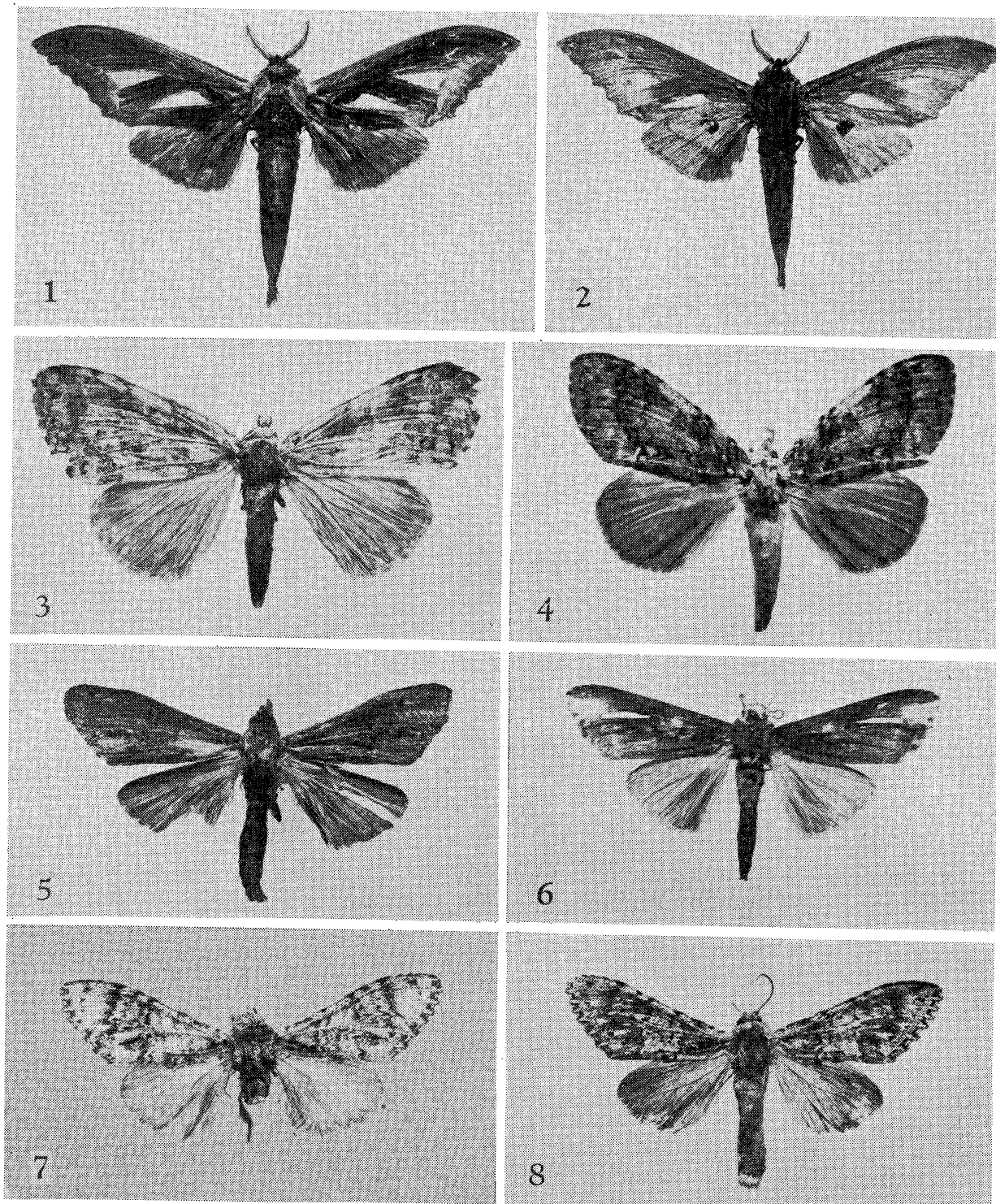
Rufobrunnea Rothschild designated as a subspecies of *remicauda* by Roepke (1944) or of *sommeri* by Gaede (1930) and Kiriakoff (1968) seems to be a valid species or a subspecies of *japonica* belonging to this subgenus after the original photograph (Rothschild, 1917). A female of *remicauda* recorded from West Java by Roepke (1944) is doubtful as its true identity on account of the antenna being shortly pectinated.

2. *Tarsolepis* (*Tarsolepisoides*) *malayana* sp. nov.

♂, expanse 76 mm. Resembling *japonica* Wileman et South but wings slender, submarginal line of forewing intensively concave and vein R_2 of forewing diverging at about one third from tip of areole, while in *japonica* vein R_2 diverging near tip of areole. Head blackish brown; tegula and patagia purplish brown; antenna bipectinated in three fourths but ciliated in apical one fourth; 3rd joint of palpus short and abrupt; abdomen blackish brown, anal tuft mingled with white, yellow and reddish brown bristles which are slightly paddle-like apically; long crimson hairbrushes at base of abdomen underside.

Forewing slender, apex somewhat acute, termen more or less concave and slightly dentate; costa and base purplish brown but apical one third of costa orange brown; central area blackish brown and bordered along basal corner by fine black line restricting inside by orange brown line; purplish brown deltoid area enclosed by this black line, vein Cu_1 and median vein; two large deltoid silver

marks slightly sharpened than those of the other species, outer margin of upper one slightly concave like that of *remicauda* but less conspicuous as that of *sommeri* or *japonica*, inner margin of under one concave like that of *japonica* or *rufobrunnea* as against straight in *remicauda* and *sommeri*; median



Figs. 1—8. Notodontidae from Malaysia. (1) *Tarsolepis* (*Tarsolepisoides*) *malayana* sp. nov., ♂; (2) do., undersurface; (3) *Somera similis* sp. nov., ♀; (4) *Somera viridifusca* Walker, ♀ (from Formosa) (5) *Brykia ferruginea* sp. nov., ♂; (6) *Metaschalis argentomaculata* sp. nov., ♂; (7) *Suzukia* (*Suzukia*) *pallida* sp. nov., ♂; (8) *Suzukia* (*Suzukia*) *formosana* Okano, ♂ (from Formosa).

line fine, orange brown, more or less indefinite, never bent on vein Cu_2 same as that of *japonica* while bent in *sommeri* and *remicauda*; submarginal line white, shaded outside with light brown between veins M_1 and Cu_2 , intensively concave, attached to outer margin of upper silver mark and extinguished in cell M_3 but in *remicauda* submarginal line running outside of upper silver mark; marginal double line black; internal distinct dentate lines lacking but indistinct light brown line running parallel to outer margin; fringe chestnut brown; vein R_2 diverging far within apex of areole while diverging just within apex of areole in *japonica*. Hindwing dark brown with blackish mark at end of cell; marginal line chestnut brown; fringe ochraceous brown. Undersurface: forewing ochreous brown mingled with pinkish tint, median area suffused with orange brown, basal and inner areas blackish brown; median line dark brown; discoidal spot dark brown and indistinct; pale yellow spots in cells Cu_1 and Cu_2 , the former quadrate and the latter heart-shaped; a series of marginal black spots fine and barely visible; fringe ochreous brown; hindwing ochreous brown mingled with pinkish tint; large black spot at end of cell; dark brown median line sinuous, never waved as that of *remicauda*; a series of marginal black spots in cells; fringe ochreous brown.

Male genitalia: uncus long and never bifid, only bilobed at tip; socius long, curved and spineous at tip; tegumen rather slender; valva broad, sacculus without harpe, costa with a spatulate process (labides) at base; aedoeagus long and slender, slightly curved upwards, apex with no spines.

Holotype: 1♂, Fraser's Hill, West Malaysia, 8 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

Neostauropus Kiriakoff

3. *Neostauropus major* van Eecke

1♂, Kuala Bok, Sarawak, 9 xii 1969 (H. Hasegawa leg.).

Male genitalia: socius comprising two portions, upper portion produced, incurve, with dorsal edge dentate while under portion broader at base, twisted inwards, with a stick-like process near apex; valva produced, sinuous, costal edge dentate; aedoeagus longer and slender; 8th sternite rather resembling that of *Quadricalcarifera*, caudal margin quadri-lobed, cephalic margin produced at meson; 8th tergite with a pair of large armed processes in center.

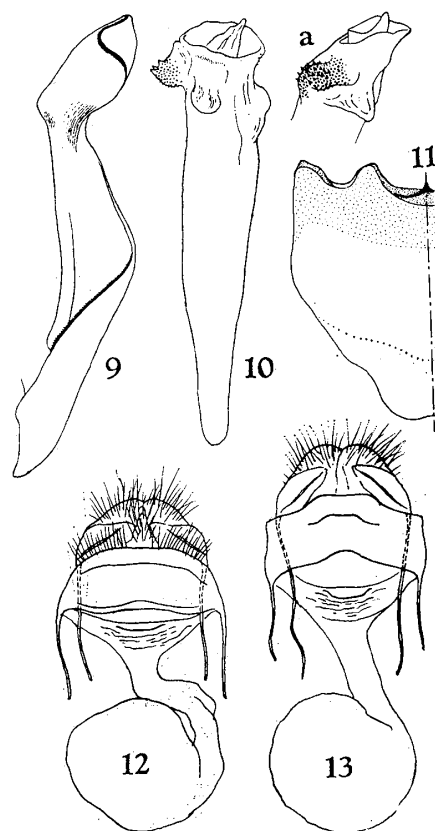
Euhampsonia Dyar

4. *Euhampsonia niveiceps* Walker

1♀, Tanah Rata near Cameron Hilands, West Malaysia, 25 ii 1970 (S. Suzuki leg.).

Kiriakoff (1968) recognized *Shachihoka* Matsumura as a valid genus but this treatment is superfluous because Matsumura's diagnosis is incorrect: viz. in *formosana* Matsumura, monotypic species of *Shachihoka*, thoracic crest present, forewing venation same as that of *niveiceps* but female antenna a little shorter pectination. The female of *formosana* only differs superficially from that of *niveiceps* in basal half of antennal shaft white; forewing with antemedian, median and postmedian lines more distinct, discoidal spot more rounded; hindwing darker in inner area of dentate postmedian line.

Unrecorded from Malaysia.



Figs. 9–11. Male genitalia of *Suzukia* (*Suzukia*) *pallida* sp. nov. (9) right valva, inner view; (10) aedoeagus, a: apical portion, lateral view; (11) 8th abdominal sternite. Fig. 12. Female genitalia of *Somera similis* sp. nov. Fig. 13. Female genitalia of *Somera viridifusca* Walker.

Somera Walker5. *Somera similis* sp. nov.

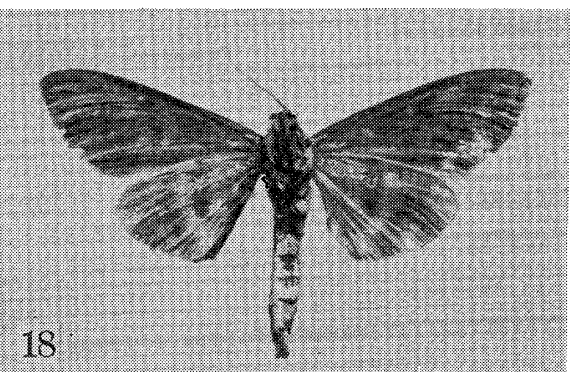
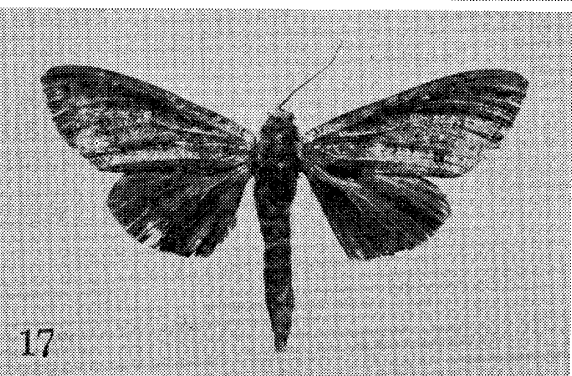
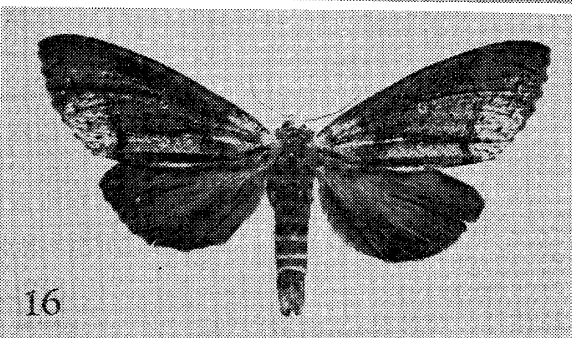
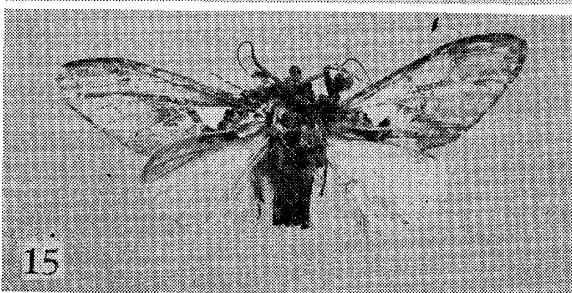
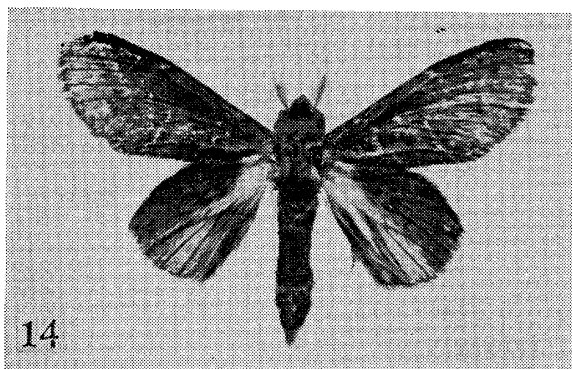
♀, expanse 57 mm. Closely allied to *S. viridifusca* Walker but larger; forewing with termen less convex; ground colour more bluish green (bronze or celadon); basal, antemedian, median and postmedian idouble lines paler, intermittent and obscure; dark greyish brown median shade very small and only extended from median line to base of vein Cu_2 as against expanded between ante- and postmedian lines in *viridifusca*; space between median and postmedian lines broader than those of *viridifusca*; submarginal black line intermittent; intermediate greyish brown shades between postmedian and submarginal lines undeveloped as against those of *viridifusca*; fringe dark brown; hindwing light greyish brown while dark brown in *viridifusca*; fringe concoloured. Undersurface of both wings ochreous; fringe of forewing dark brown chequed with ochre, fringe of hindwing ochreous, in *viridifusca* forewing suffused with dark brown.

Female genitalia: only differing from *viridifusca* in slightly shorter apophysis posterioris; genital plate with flatter both caudal and cephalic margins; ductus bursa sinuous.

Holotype: 1♀, Tanah Rata-Brinchang, Cameron Highlands, West Malaysia, 5 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

Quadricalcarifera Strand6. *Quadricalcarifera hasegawai* sp. nov.

♀, expanse 60 mm. Somewhat similar to female of *Q. viridipicta* Wileman from Formosa but larger and forewing slender. Also similar to male of *fasciata* Moore from India but forewing with whitish fascia between postmedian and submarginal lines. Head, patagia, tegula and thorax greyish brown; forewing greyish white irrorated with dark brown, especially densely in inner area from postmedian line; suffused with lustrous green at base, inner area, blackish blotch on costa beyond middle and outer area from submarginal line; orbicular spot, discoidal spot and spot at base of cell Cu_2 whitish ringed; basal and antemedian dark brown dentate lines double, indistinct, the latter straight from costa to cell Cu_2 and strongly produced outwards between cell Cu_2 and inner margin; median double



Figs. 14–18. Notodontidae from Malaysia. (14) *Neostauropus major* van Eecke, ♂; (15) *Ginshachia aritai* sp. nov., ♂; (16) *Phalera birmicola* Bryk, ♀, from Sarawak; (17) do, ♂, from Malaysia; (18) do, ♂, undersurface.

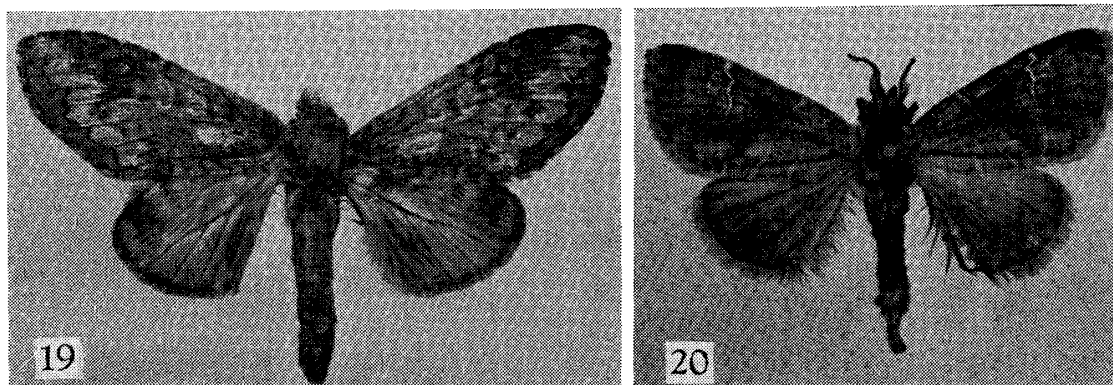


Fig. 19. *Quadricalcarifera fasciata ma'ayana* subsp. nov., ♀. Fig. 20. *Erythroc'ostera leucoretha* Tams, ♂.

line dark brown only appearing on costa; postmedian darker line dentate, indistinct, from costa to vein M_3 concealed into costal blotch, then running to inner margin parallel to outer margin, with small blotches on outside in cells Cu_1 to $2A$; submarginal blackish brown line dentate, nearly parallel to outer margin from apex to hind angle, slightly notched inward on vein M_2 ; fringe dark brown but ochraceous at end of veins; hindwing greyish brown but costal area greyish white irrorated with dark brown, with dark brown median band and blackish brown double submarginal band between them suffused with lustrous green; fringe dark brown but mixed with ochraceous. Undersurface: forewing greyish brown, slightly darker at costal and outer margins; hindwing whitish brown.

Holotype: 1 ♀, Fraser's Hill, West Malaysia, 8 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

7. *Quadricalcarifera fasciata malayana* subsp. nov.

♀, expanse 70 mm, almost identical with nominate subspecies but larger; forewing inner and costal blotches suffused with slightly lustrous yellowish green; hindwing same as in *umbrosa* Matsumura from Formosa.

Holotype: 1 ♀, Fraser's Hill, West Malaysia, 8 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

***Formofentonia* Matsumura**

8. *Formofentonia orbifer* Hampson

1 ♂, Jalam Sultar, Abu Baker, Cameron Hilands, West Malaysia, 1 xi 1969 (H. Hasegawa leg.). Unrecorded from Malaysia.

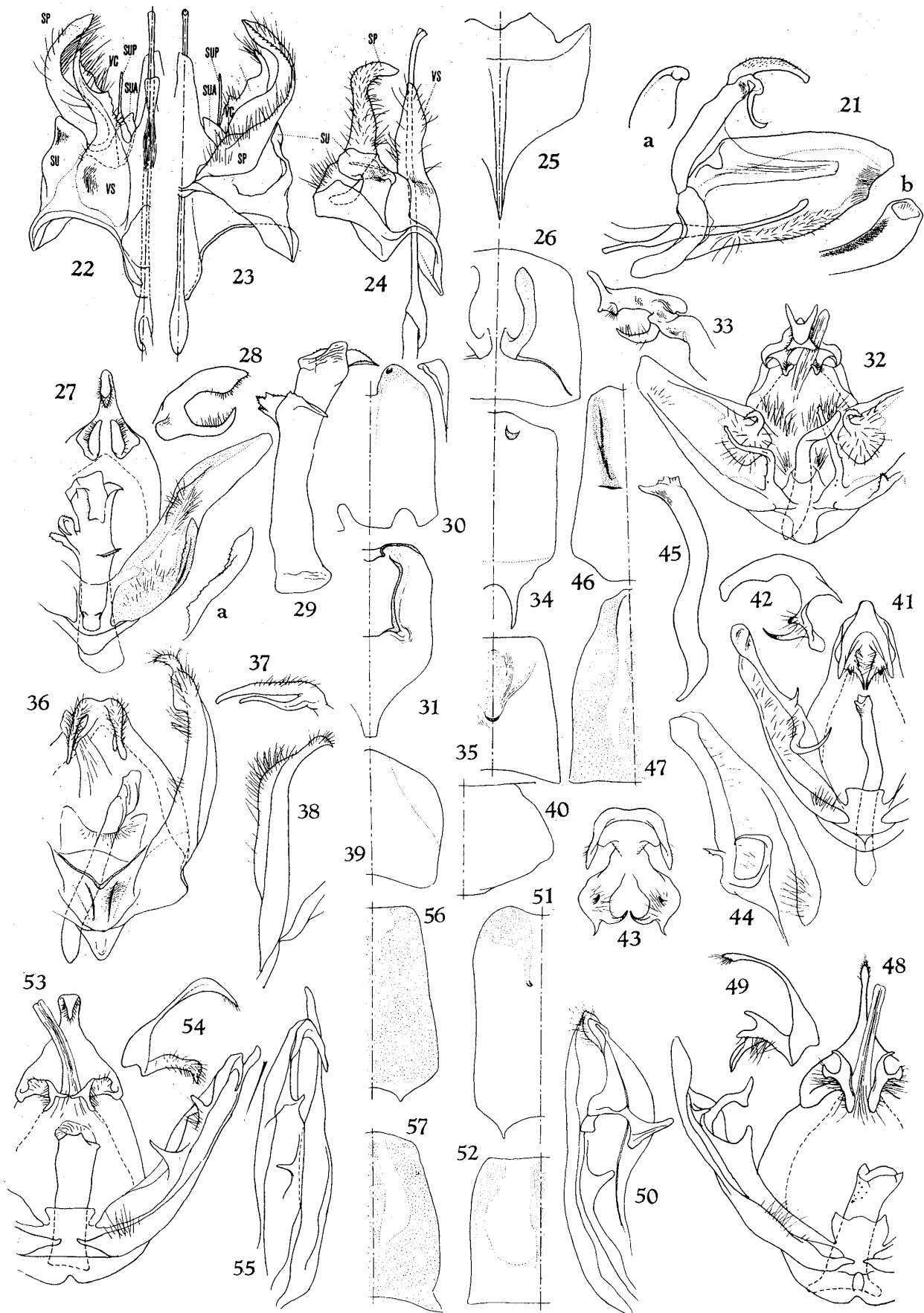
***Metaschalis* Hampson**

9. *Metaschalis argentomaculata* sp. nov.

♂, expanse 47 mm. Closely allied to *M. disrupta* Moore from Sikkim but only differing in the following: patagia chestnut brown but ochreous at sides; thorax with creamy white hairs at caudal end; forewing slightly slender, cell spot white, semicircular, streak in cell M_3 silvery white. Undersurface: forewing fuscous suffused with blackish tint in costal area, from base to cell spot, streak in cell M_3 and large patch on outer margin below apex creamy white; hindwing creamy white.

Male genitalia: merely differing from *disrupta* in the following: uncus projecting backwards at base, with a knob at latero-caudal corner of apical face; valva not so acute at tip, costal process shorter and more inverted; asymmetrical long process extending from lateral corner of juxta.

Holotype: 1 ♂, Tanah Rata-Ringlet, Cameron Hilands, West Malaysia, 4 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.



Suzukia Matsumura10. *Suzukia* (*Suzukia*) *pallida* sp. nov.

♂, expanse 47 mm. Perfectly coinciding with *cinerea* Butler and *formosana* Okano in wing pattern but forewing never suffused with yellow or greenish yellow, dark brown or reddish brown streaks instead of black streaks in *cinerea* and *formosana* and consequently lighter at a glance; hindwing paler whitish brown.

Male genitalia: uncus single; valva elongated, W-like sinuate, without processes; aedoeagus with trigonal process near apex at opposite side to *cinerea* and *formosana* and two knobles.

Holotype: 1♂, Tanah Rata-Ringlet, Cameron Hilands, 4 xi 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

Brykia Gaede11. *Brykia ferruginea* sp. nov.

♂, expanse 48 mm. Antenna, palpus and head castaneous; patagia, tegula and thorax ferrugineous mingled with flavescent hairs; abdomen castaneous upper and flavescent under with castaneous anal tuft; leg flavescent mingled with ferrugineous hairs. Forewing ferrugineous slightly suffused with leaden tint in basal and median areas; four yellow specks on costa near apex; ante- and postmedian lines black; submarginal crescent line black; fine marginal black line; gourd-shape discoidal spot and its outside disk-like spot black and bordered by yellowish brown line; elongate black mark in cell Cul; fringe lead grey. Hindwing uniformly greyish brown; fringe dark brown. Undersurface: forewing dark brown with indistinct darker median band, fringe castaneous; hindwing paler, with castaneous median band, fringe same as forewing.

Male genitalia: Closely allied to *horsfieldi* Moore but sacculus lobe of valva less developing and comprising elongate sclerotized plate with dentate ridge; juxta with a pair of knobles near ventral margin.

Holotype: 1♂, Kuala Bok near Miri, Sarawak, 9 xii 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tokyo.

Fig. 21. *Tarsolepis* (*Tarsolepisoides*) *malayana* sp. nov., ♂ genitalia, lateral view, a: apical portion of uncus, latero-ventral view, b: apical portion of aedoeagus. Figs. 22–26. *Neostauropus major* van Eecke, ♂ genitalia. (22) ventral view; (23) dorsal view; (24) lateral view; (25) 8th sternite; (26) 8th tergite. SP: upper portion of socius, SU: under portion of socius, SUA: apex of under portion of socius, SUP: process of under portion of socius, VC: costal area of valva, VS: sacculus area of valva. Figs. 27–31. *Brykia ferruginea* sp. nov., ♂ genitalia. (27) caudal view, a: sacculus lobe, lateral view; (28) uncus and socius, lateral view; (29) aedoeagus; (30) 8th sternite; (31) 8th tergite. Figs. 32–35. *Metaschalis argento-maculata* sp. nov., ♂ genitalia. (32) caudal view; (33) uncus and socius, lateral view; (34) 8th sternite; (35) 8th tergite. Figs. 36–40. *Formofentonia orbifer* Hampson from Malaysia, ♂ genitalia. (36) caudal view; (37) uncus and socius, lateral view; (38) valva, lateral view; (39) 8th sternite; (40) 8th tergite. Figs. 41–47. *Ginshachia aritai* sp. nov., ♂ genitalia. (41) caudal view; (42) uncus and socius, lateral view; (43) do, ventro-caudal view; (44) valva, internal view; (45) aedoeagus; lateral view; (46) 8th sternite; (47) 8th tergite. Figs. 48–52. *Phalera javana* Moore, ♂ genitalia. (48) caudal view; (49) uncus and socius, lateral view; (50) valva, internal view; (51) 8th sternite; (52) 8th tergite. Figs. 53–57. *Phalera birmico'a* Bryk, ♂ genitalia. (53) caudal view; (54) uncus and socius, lateral view; (55) valva, internal view; (56) 8th sternite; (57) 8th tergite.

Ginsachia Matsumura12. *Ginsachia aritai* sp. nov.

♂, expanse 47 mm. Closely allied to *gemmifera* Moore and *elongata* Matsumura, but forewing slenderer, more reddish hue with submarginal spotted line indistinct; hindwing white, slightly suffused pale yellow tint at hind angle, fringe white. Undersurface of both wings white.

Male genitalia: apex of uncus abrupt; socius with a knob near base, apical process never outcurved; valva without sacculus arm, costal arm thorn-like, projection of costal string acutely bent at half-way, apical process of aedoeagus bar-shape.

Holotype: 1♂, Tanah Rata near Cameron Highlands, West Malaysia, 24 ii 1970 (S. Suzuki leg.), in coll. Nakamura.

Phalera Hübner13. *Phalera javana* Moore

1♂, Muda Dam, Baling, West Malaysia, 17 x 1969 (H. Hasegawa leg.).

In the forewing venation, veins R_2 and R_5 diverging from a point of the common stem of R_3 - R_4 .

14. *Phalera birmicola* Bryk

1♂, Fraser's Hill, West Malaysia, 8 xi 1969 (H. Hasegawa leg.); 1♀, Marudi near Miri, Sarawak, 10 iii 1969 (T. Kunou et Y. Arita leg.).

Unrecorded from the Malay Peninsula and Borneo.

A female specimen from Sarawak is very fresh and perfectly coincides with Bryk's original photograph exclusive of the size (expanse 101 mm, forewing length 49 mm), while a Malayan male (expanse 86 mm, forewing length 41 mm) fades and slightly differs from the female in the more or less narrower forewing, the lighter basal area of the undersurface of both wings (especially hindwing) and the more whitish abdomen but I identified it as *P. birmicola* owing to many other accordant features.

In the venation of forewing, vein R_2 diverging from a common stem of R_3 - R_4 and vein R_5 from the tip of areole.

Male genitalia: uncus broader near apex, latero-basal sloping; socius transverse, bifurcate apically; valva more or less slender, with terminal process of ampulla uncinate bent, end of cucullus heavily produced, two pads considerably projected; juxta simple; 8th sternite without median tubercle, cephalo-lateral process very short.

Erythroclastera Kiriakoff15. *Erythroclastera leucoretha* Tams

1♂, Kuala Bok, Sarawak, 9 iii 1969 (T. Kunou et Y. Arita leg.). Unrecorded from Borneo.

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